S1-O-05

Enhancing the adoption worldwide of Arabica hybrids through implementation of on-farm trials, transfer of propagation techniques and stakeholder dialog platforms

Etienne Hervé[1] (herve.etienne@cirad.fr), Georget Frédéric[2], Ruiz Teresa[3], Bordeaux Mélanie[3], Leroy Thierry[4], Penot Eric[5], Marraccini Pierre[6], Vaast Philippe[7], Courtel Philippe[8], Turreira Garcia Nerea[9], Ehabe Eugène[10], Nyambi Gwendoline[10], Njiayouom Ibrahim[11], Billa Samuel[11], Bertrand Benoît[1], Do Vinh[12], Nguyen Chang[13], Nguyen Hai[14], Vu Trang[13], Nguyen Trung[13], Nguyen Van[13], Luu Quyen[14], Nguyen Hung[13], Bueso Valera Carlos[15], Skovmand Bosselmann Aske[9]

[1] *CoffeeAdapt team, UMR DIADE, BIOS department, CIRAD, Montpellier, France* ; [2] *CoffeeAdapt team, UMR DIADE, BIOS department, CIRAD, San José, Costa Rica* ; [3] *Nicafrance, Managua, Nicaragua* ; [4] *UMR AGAP, CIRAD, Montpellier, France* ; [5] *UMR Innovation, CIRAD, Montpellier, France* ; [6] *CoffeeAdapt team, UMR DIADE, BIOS department, CIRAD, Hanoi, Vietnam* ; [7] *UMR Eco & Sol / ICRAF, CIRAD, Hanoi, Vietnam* ; [8] *Exportadora Atlantic (ECOM group), Managua, Nicaragua* ; [9] *IFRO, FAculty of Science, University of Copenhagen, Copenhagen, Denmark* ; [10] *IRAD, Yaoundé, Cameroon* ; [11] *IRAD, Fumbot, Cameroon* ; [12] *AGI, Hanoi, Vietnam* ; [13] *NOMAFSI, Mai Son (Son La), Vietnam* ; [14] *NOMAFSI, Phu Tho, Vietnam* ; [15] *SNV (Netherlands development organization), Managua, Nicaragua*

RATIONALE

New coffee hybrids are important for addressing issues of quality, pests & diseases and climate change, but new plant varieties often encounter slow adoption among farmers due to uncertainties and access. Even when coffee hybrids are shown to be more productive and resistant to (a) biotic stresses, less than 5 % of the orchard in Latin America is planted with hybrids each year. A new dissemination strategy is needed, based on access to technology, data and networks, to increase farmer uptake. This is the aim of the H2020 project BREEDCAFS, based on sharing of propagation techniques locally, local assessment of hybrids in agroforestry systems (AFS), and setup of national stakeholder dialog platforms and sustainable agroforestry clusters. Here, we give a first glimpse of the implementation of this new approach.

METHODS

For hybrid assessment, on-farm demo-plots with 4 hybrids and a local control were planted in Nicaragua, Costa Rica, Cameroon and Vietnam. Agronomic observations, quality testing, and farmer surveys are carried out to evaluate productivity, profitability and farmer acceptance. Technology for combined somatic embryogenesis (SE) and rooted mini cuttings (RMC) were transferred to partners in Vietnam, Cameroon and Nicaragua, where dialogue platforms have also been created for all stakeholders in the sector. Further, implementation of agroforestry clusters has been initiated with groups of farmers cultivating new hybrids in sustainable AFS, targeted specialty buyers.

RESULTS

The combination of SE and RMC is showing to be a lower-cost approach than solely focusing on the complex and expensive method of SE for vegetative propagation of hybrids. The setting-up of rooted mini cuttings nurseries to Vietnam and Cameroon has allowed mass propagation of hybrids locally at reduced costs, while a women's cooperative in Nicaragua now runs a business producing and selling mini-cuttings. Initial field observations are encouraging; in Costa Rica and Nicaragua hybrids are more productive and produce a better coffee quality in AFS, while observations in Vietnam and Cameroon confirmed higher vigour and yield. In Nicaragua, a 1,250 ha agroforestry cluster is already running successfully, delivering high quality coffee to a specialty buyer; a setup that is now being replicated in Vietnam and Cameroon.

CONCLUSIONS & PERSPECTIVES

The hybrids assessed in BREEDCAFS show very promising results. As these hybrids are among the first on the market, many innovations are needed to promote their dissemination and adoption. Our approach to disseminate the Arabica hybrids in the coffee belt form a coherent strategy that appears to be effective in addressing replanting new varieties adapted in the coffee sector.